



NOTAS SOBRE  
**MAMÍFEROS**  
SUDAMERICANOS

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# NOTAS SOBRE MAMÍFEROS SUDAMERICANOS



## First record of albinism in *Leopardus pardalis* (Linnaeus, 1758) in Colombia: conservation implications and captive management

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### ABSTRACT

Albinism is a genetic condition characterized by the complete or partial absence of melanin, resulting in white or pink coloration of the skin, fur, and iris. In wild cats this condition may present additional survival challenges, particularly for activities such as hunting or camouflage. However, most cases of this phenomenon are documented in individuals kept in captivity. Here, we report the first documented case of complete albinism in a *Leopardus pardalis* (Linnaeus, 1758) in Colombia. The individual, a blind juvenile female, was rescued in 2021 in a biological corridor in the department of Antioquia and currently resides at the Parque de la Conservación in Medellín, where she receives specialized care due to her condition. This report highlights the distinct challenges this animal would likely face in the wild and emphasizes the critical importance of captive care in ensuring its survival.

**Key words:** captive care, genetic mutation, ocelot, wildlife conservation

### RESUMEN - Primer registro de albinismo en *Leopardus pardalis* (Linnaeus, 1758) en Colombia: implicancias para la consevación y el manejo en cautiverio

El albinismo es una condición genética caracterizada por la ausencia parcial o completa de melanina, lo que resulta en una coloración blanca o rosada de la piel, el pelaje y el iris. En felinos salvajes esta condición puede presentar desafíos adicionales para la supervivencia, como dificultades en la caza o el camuflaje. No obstante, la mayoría de los casos conocidos se documentan en individuos mantenidos en cautiverio. Aquí reportamos el primer caso documentado de albinismo completo en un *Leopardus pardalis* (Linnaeus, 1758) en Colombia. El individuo, una hembra juvenil ciega, fue rescatado en 2021 en un corredor biológico en el departamento de Antioquia y actualmente reside en el Parque de la Conservación en Medellín, donde recibe cuidados especializados debido a su condición. Esta nota destaca los desafíos únicos que este animal podría enfrentar en la naturaleza y subraya la importancia crucial del cuidado en cautiverio para garantizar su supervivencia.

**Palabras clave:** conservación de fauna silvestre, cuidado en cautiverio, mutación genética, ocelote

Albinism is a genetic condition associated with the absence or reduction of melanin, a pigment responsible for coloration in skin, fur, and eyes (Montoliu et al. 2014; Espinal et al. 2016; de Vasconcelos et al. 2017). This condition is linked to mutations

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in genes such as TYR and OCA2, which disrupt melanin production and result in oculocutaneous albinism (OCA) (Schmidt-Küntzel et al. 2005; Imes et al. 2006; Xu et al. 2013; Aximoff & Rocha 2016; Mériot et al. 2020). Albino individuals often exhibit traits such as sensitivity to sunlight and visual impairments due to the lack of pigmentation in their eyes, skin, and fur (Espinal et al. 2016; Stumpp et al. 2019; Tokuda et al. 2021).

In the wild, melanin plays a functional role in processes like camouflage, protection from UV radiation, and visual perception (Stumpp et al. 2019; Tokuda et al. 2021). While these traits may influence an individual's ability to interact with its environment, their specific impact can vary across species and ecological contexts. For some individuals, the absence of melanin may correlate with increased visibility to predators or challenges in performing specific tasks, such as hunting or foraging (Abreu et al. 2013; Aximoff & Rocha 2016; Romero et al. 2018). However, it is also documented that the persistence of albinism-related genes may result from genetic diversity mechanisms or specific environmental conditions that mitigate its potential disadvantages (Keller & Waller 2002; Duquette et al. 2015; Espinal et al. 2016; Montilla & Link 2022). Consequently, the effects of albinism are not universally detrimental or advantageous but are instead highly context-dependent and require further study (Mills & Patterson 2009; Camacho et al. 2022).

Chromatic disorders such as leucism and melanism are more commonly observed in wild felids like *Leopardus tigrinus* (Schreber, 1775) (Graipel et al. 2014), *Panthera pardus* (Linnaeus, 1758) (da Silva et al. 2017), *Panthera leo* (Linnaeus, 1758) (Van der Weyden et al. 2021), and *Leopardus munoai* (Ximenez, 1961) (Mazim et al. 2023), compared to albinism. Unlike albino animals, those with leucism have normal eye color and are not severely affected by sunlight (Keller & Waller 2002). Melanistic animals may even benefit from their condition in context dependent events, gaining advantages as camouflage with no health conditions (Keller & Waller 2002; Graipel et al. 2014; Mackinven & Briskie 2014; da Silva et al. 2017; Van der Weyden et al. 2021).

In November 2021, an albino *L. pardalis* cub was rescued by officials from the Secretaria de Desarrollo Económico Sostenible y Ambiental of Amalfi working with the local firefighters, in the northernmost part of the Central Mountain Range and in the Northeastern subregion of the department of Antioquia. The individual was voluntarily handed over by residents of El Cañón del Mata, a biological corridor in northeastern Antioquia (Fig. 1). Upon rescue, the juvenile ocelot weighed 440 grams and displayed no signs of recent injuries or maternal dependence. However, its small size and low weight suggest limited self-sufficiency (Suárez-Ramírez 2022). After the rescue, the feline was transferred to the Parque de la Conservación in Medellín, Antioquia for specialized care.

Since its rescue in 2021, the individual has been kept in captivity due to its inability to survive in the wild, resulting from its albinism, which includes complete blindness and extreme photosensitivity (Schmidt-Küntzel et al. 2005; Imes et al. 2006). Initially, the feline was placed in a quarantine area for approximately five months, in a square enclosure made of metal mesh and concrete. During this period, it exhibited a marked pacing stereotypy behavior (Clubb & Vickery 2006). Afterward, the animal

was moved to a specially adapted exhibit enclosure designed to meet its basic needs, located in front of the experimental turtle pond and next to the grison habitat. In 2022, Suárez-Ramírez (2022) tested the conditions where the animal is kept and found that the albino ocelot exhibited exploratory behavior characterized by tactile interaction with branches and climbing short structures adapted for its visual limitations. Pacing behavior was observed but reduced with enrichment interventions. Currently, in 2024, the albino female has reached adulthood, weighing approximately 13 kilograms, and displays active behavior during the morning, although it continues to show stereotypy in various areas of its enclosure (Suárez-Ramírez 2022)

The decision to keep this ocelot in captivity is based on the known limitations associated with albinism, such as blindness and extreme photosensitivity, as documented in the literature (Schmidt-Küntzel et al. 2005; Imes et al. 2006; Xu et al. 2013; Aximoff & Rocha 2016; Mériot et al. 2020). Contrary to the typical coloration of ocelots, which features a striking pattern of yellow-orange fur adorned with black stripes and spots (Murray & Gardner 1997; Fig. 2A), the albino individual lacks this natural camouflage, increasing its vulnerability in the wild (Espinal et al. 2016; Montilla & Link 2022).

The absence of pigmentation diminishes the ocelot's ability to blend into its environment by exposing it to additional risks such as potential predation and difficulty in hunting (Duquette et al. 2015; Espinal et al. 2016; Montilla & Link 2022), furthermore for a nocturnal species as this felid (Murray & Gardner 1997). However, the impact of albinism on survival in the wild is still debated. While some studies support the idea that albino individuals face higher predation rates due to their conspicuous appearance and other disadvantages, others argue that evidence for such differential predation is inconclusive (Keller & Waller 2002; Abreu et al. 2013). In certain contexts, unusual coloration might even offer unexpected advantages, such as confusing predators or signaling toxicity (Mackinven & Briskie 2014). These differing perspectives emphasize the complexity of the ecological dynamics of albinism and highlight the need for further research to fully understand its implications for survival.

Although the exact origin of this albino ocelot remains unknown, its condition would pose significant survival challenges in the wild. Albino animals like this ocelot face unique challenges that require specialized care in captivity. For this individual, a customized enclosure has been adapted with controlled lighting to minimize the effects of extreme photosensitivity, while tactile enhancements help navigate its environment despite complete blindness. Observations revealed that the ocelot showed heightened reliance on tactile and auditory cues, compensating for its visual deficits. Locomotion involved deliberate and cautious movements along familiar paths, demonstrating adaptability to the enclosure design and a preference for consistent spatial arrangements (Suárez-Ramírez 2022).

Additionally, tailored enrichment activities, such as auditory stimulation and textured surfaces, are implemented to encourage exploration and interaction with its environment. These activities aim to foster mental and physical well-being, ensuring engagement despite its sensory limitations (Suárez-Ramírez 2022).

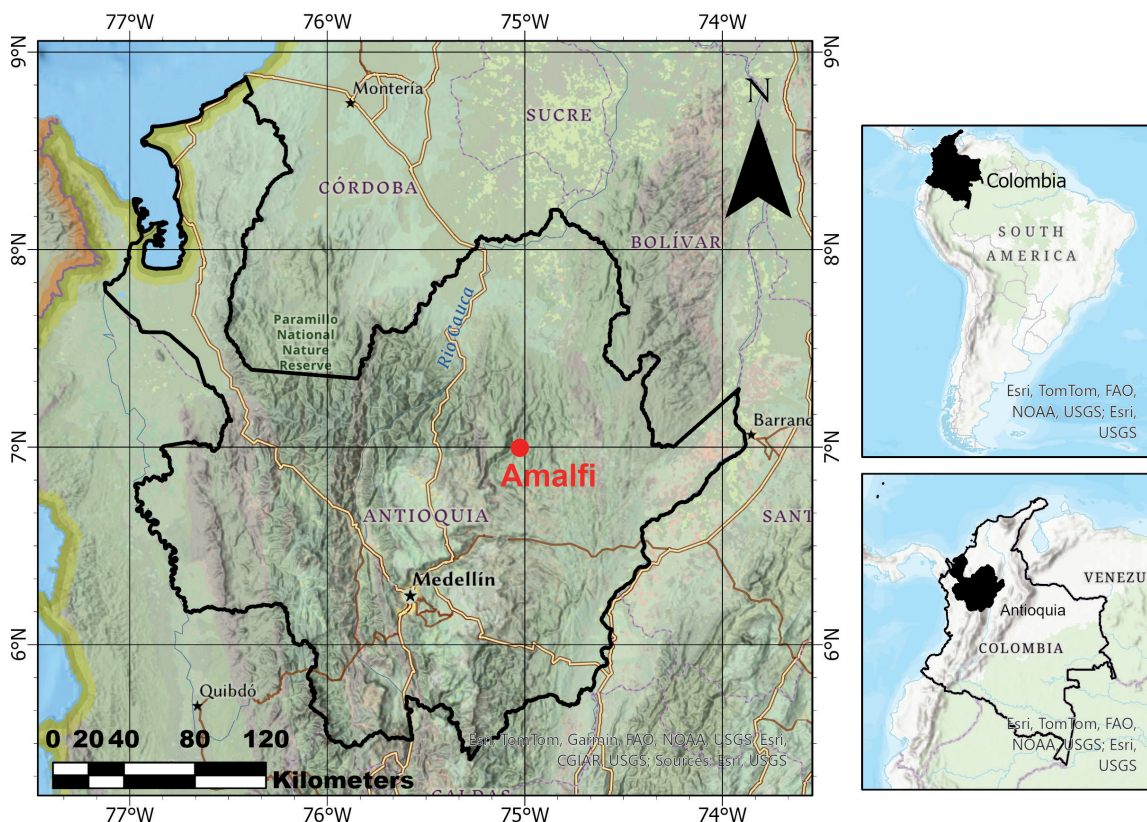
Regular veterinary check-ups were conducted to monitor potential health com-



plications often linked to the ocelot's genetic condition. However, the diseases and pathologies observed, such as episodes of diarrhea and bone fragility, were not directly attributed to its genetic condition but were likely associated with insufficient dietary intake prior to captivity. These issues were managed through probiotics, dietary adjustments, calcium supplements, and controlled UV lighting. Skin conditions, although closely monitored, did not present significant issues during captivity (Suárez-Ramírez 2022). This case highlights the importance of conservation centers in providing safe environments for such individuals while enabling valuable research on rare genetic conditions. The insights gained not only improve the care of this particular ocelot but also contribute to the broader understanding of managing albino animals in captivity.

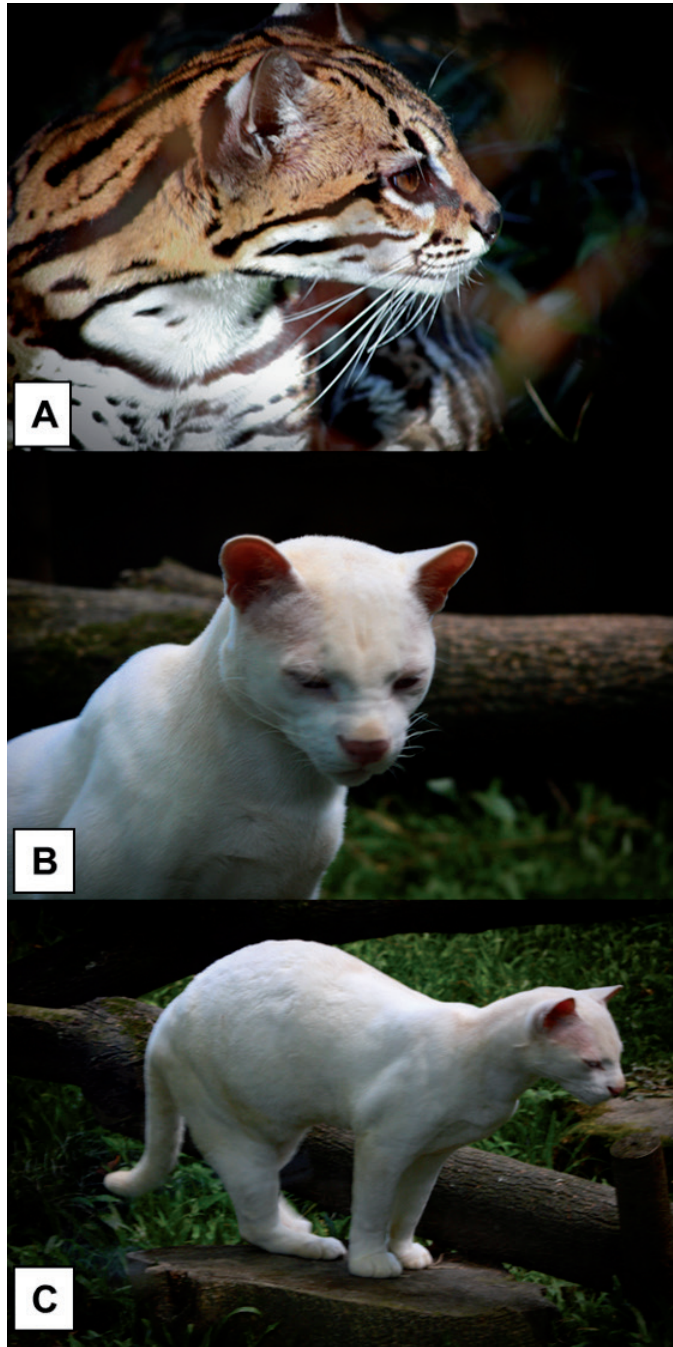
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**Figure 1.** Locality of the encounter with the albino female of *Leopardus pardalis* in Amalfi Antioquia, Colombia (marked in red).





**Figure 2.** Images showing the typical coloration of *Leopardus pardalis* (A) compared with the newly reported case of albinism in a female individual (B, C). Photographs by Julián Arango Lozano at Parque de la Conservación Medellín, Colombia.

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